

---

(12) UK Patent Application (19) GB (11) 2 1 1 7 7 3 5 A

---

(21) Application No 8307427  
(22) Date of filing  
17 Mar 1983

(30) Priority data

(31) 362213

(32) 26 Mar 1982

(33) United States of America  
(US)

(43) Application published  
19 Oct 1983

(51) INT CL<sup>3</sup> B65D 75/06

(52) Domestic classification  
B8P E5  
U1S 1808 1809 B8P

(56) Documents cited  
GB 1293889  
GB 1192265

(58) Field of search  
B8P

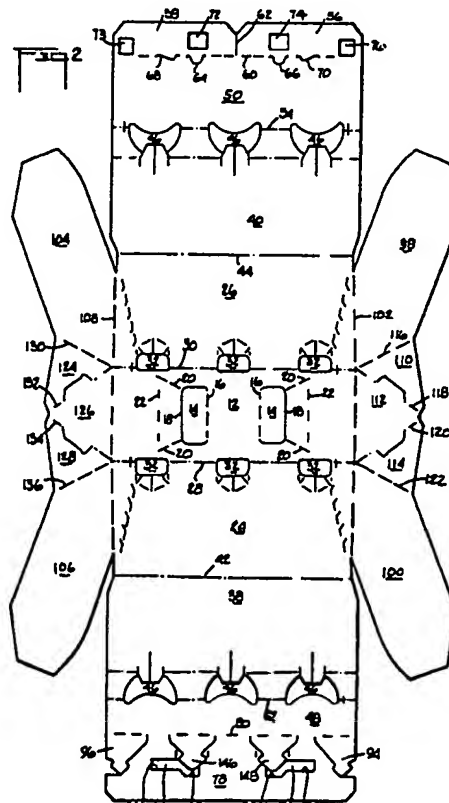
(71) Applicant  
Manville Service  
Corporation  
(USA—Colorado)  
Ken-Caryl Ranch  
Denver  
Colorado 80217  
United States of  
America

(72) Inventor  
Earl John Graser

(74) Agent and/or Address for  
Service  
Lewis W Goold and Co  
Whitehall Chambers  
23 Colmore Row  
Birmingham B3 2BL

(54) Wrap-around package for be-  
verage containers

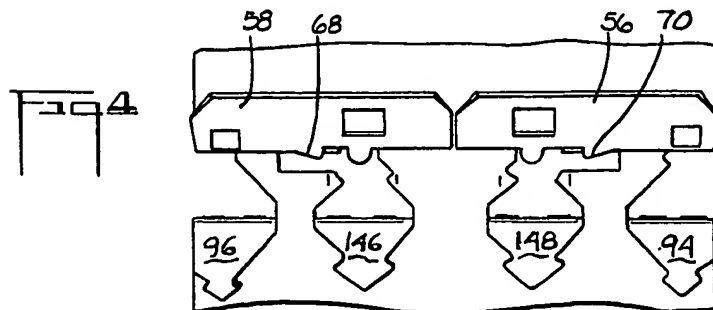
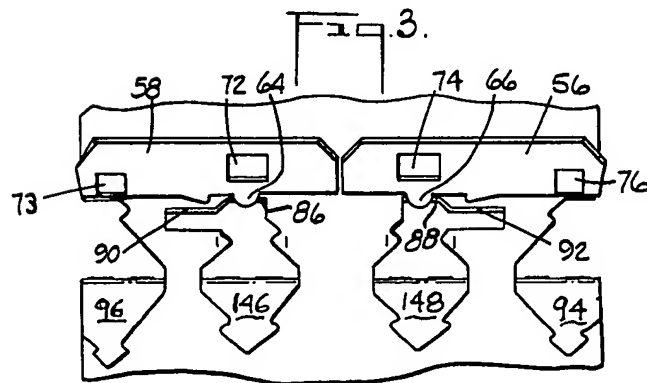
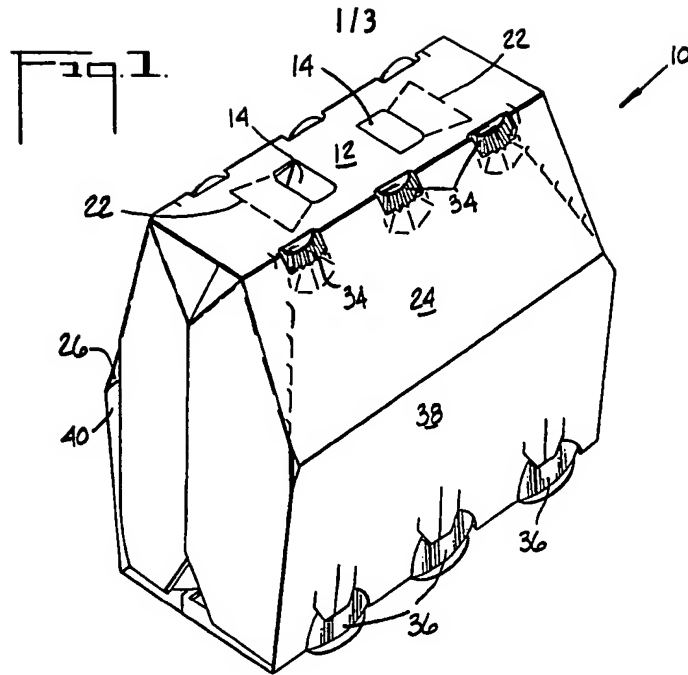
(57) A wrap-around package for cans or bottles comprises a first outer margin 56, 58 for cooperation with a second outer margin 78, the first margin (56, 58) having primary male locking tabs 64, 66 for cooperation with primary female locking means in the form of slots 82, 84 in the second margin 78, while the second margin 78 has secondary punch-style male locking portions 146, 148 for cooperation with secondary female locking means 72, 74 in the first margin 56, 58. Tertiary male locking tabs 94, 96 and female locking portions 73, 76 may also be provided.



GB 2 1 1 7 7 3 5

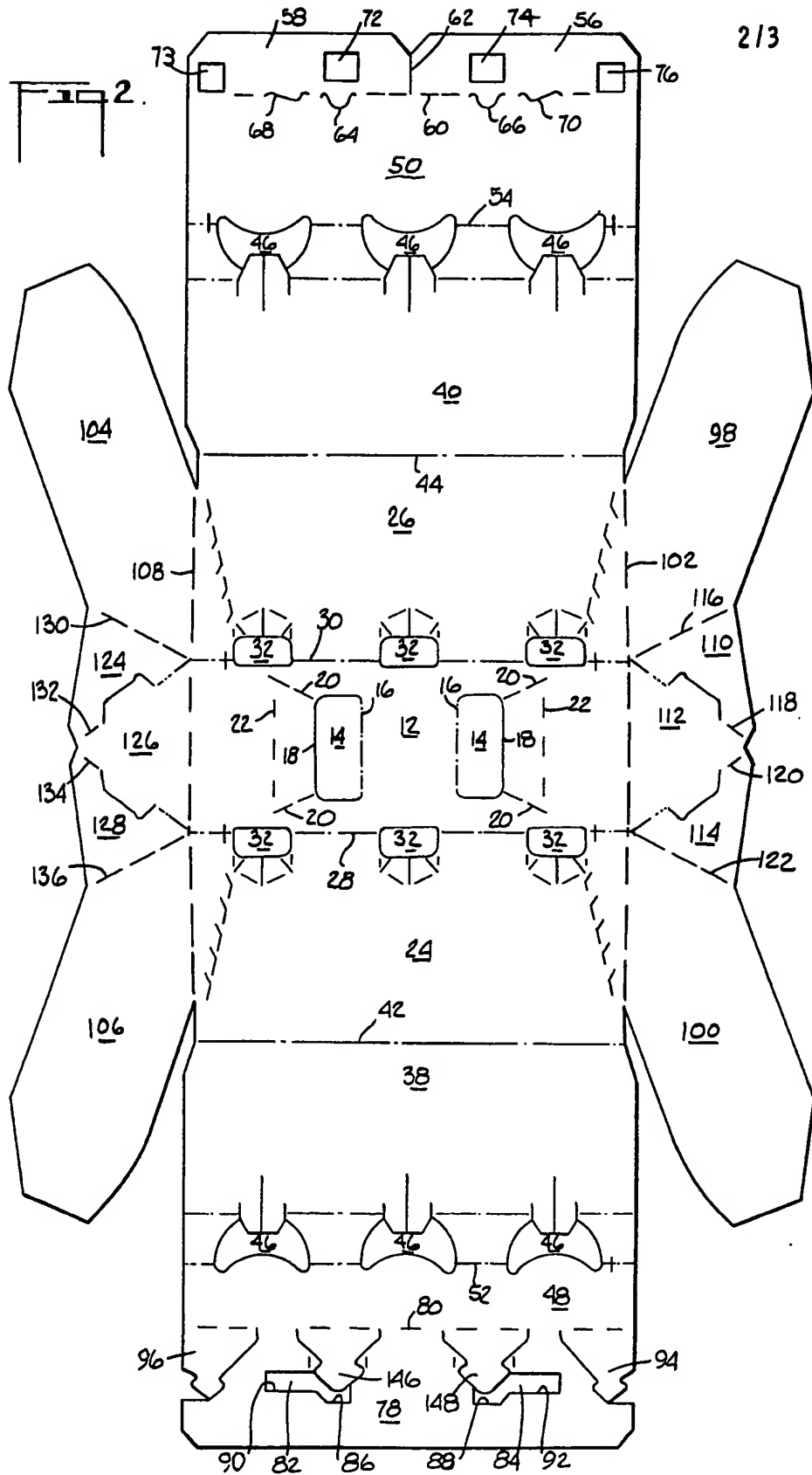
1/3

2117735



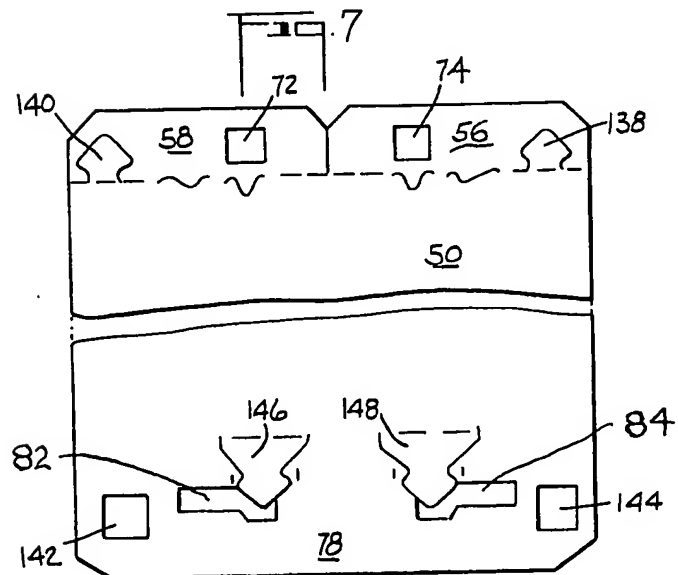
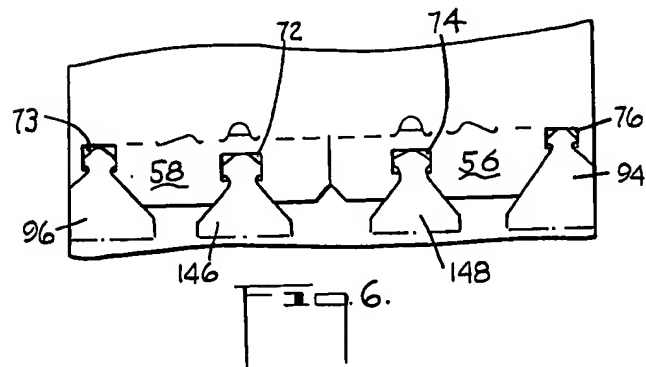
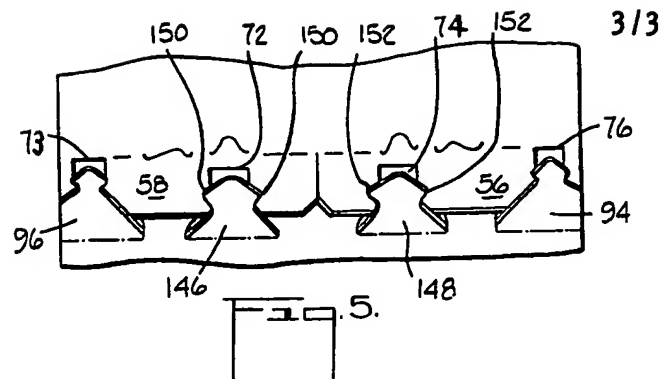
2/3

2117735



3/3

2117735



## SPECIFICATION

### Beverage package and production blank with improved locking features

5

#### *Background of the Invention*

This invention relates generally to beverage carriers and more particularly to a new and improved beverage package and production blank for the package having improved locking features. In the manufacture of beverage carriers, it is known to provide wrap-around style carriers having bottom locking panels for locking the carrier tightly around the bottles contained in the package. It is also known to provide adjustable locking portions in the bottom of the carriers in order to be able to tightly lock the carrier whenever an oversize or undersize group of bottles may be positioned in the carrier. Such adjustable locking features are typified in the U.S. Patent No. 3,395,791 issued to E.J. Graser on August 6, 1968; the U.S. Patent No. 3,548,566 issued to E.C. Sherman on December 22, 1970 and U.S. Patent No. 3,478,951 issued to E.J. Graser on November 18, 1969. Such adjustable locking devices have been utilized in the past and the before-cited references are given as typical types of adjustable locking devices presently on the market, there being other forms and configurations of the locking structure presently available throughout the industry.

There is also available, automatically adjustable punch-style locking sections formed on wrap-around beverage carriers such as typified by the U.S. Patent No. 3,508,699 issued to E.J. Graser on April 28, 1970 as well as other variations of the punch-style locking portion involving changes in the configuration of the lock structure in order to accomplish positive locking.

Such known locking devices have been utilized singly to accomplish positive locking control of the package and have been satisfactory for nominal package usage as required over the years by purchasers of the package structure. In recent years, abnormal use of the package by the ultimate consumer has dictated a different locking structure combination which will give positive locking features under even the most adverse conditions in order to eliminate drop-out of the bottles from the package. For example, it has been found when the bottle carriers are dry they tend to be totally functional when carried by either two finger holes or when carried by one finger hole and on an angle. However, when the bottom of the carrier is in direct contact with water which happens in exceptional cases, a drastic reduction in the bottle retention qualities of the carrier results making the package a high risk package for bottle drop-out and

It has also been found that if the package is exposed to a cold environment such as might occur in a cold box at a retail outlet of say 40°F, and the package is purchased and placed in a hot, humid environment such as a consumer's car trunk for two or three hours, the carrier also may become a high risk one for bottle fall-out during carrying of the package by the consumer. The probable reason for this is that it is felt condensation forming on the cold package, running down the bottles' sides and soaking the bottom carrier panel can contribute to reduced retention qualities of the carrier locking portions.

It is also felt that bottle fall-out can result in carriers when the carrier loses "rigidity" as a result of controlled environmental warehousing, hot, humid conditions in delivery trucks and cold boxes at retail outlets. When subject to the above, it is felt that condensation may form on the cold bottles and transfer to the carrier board to possibly weaken the carrier considerably in the area of the locking portions. When such conditions occur, it is felt that the carrier may become a high risk package even though these adverse conditions appear to occur at exceptional times only and not normal times during the life cycle of the package.

95

#### *Summary of the Invention*

In order to overcome the before-mentioned problems that may occur in exceptional conditions to which a beverage package may be subjected, there has been provided by the subject invention a new and novel beverage package and production blank for a beverage package having improved locking features. These improved features combine the positive locking features of the before-described primary and female adjustable locking sections incorporated in prior art devices with primary and secondary punch-style locking portions also incorporated in other devices. When combined thusly, the new and improved package has improved qualities which should be able to withstand the exceptional conditions hereinbefore described. There is also featured with the Applicant's new and improved beverage package a tertiary male and female locking portion which may be added to the before-mentioned combination in order to provide a still more positive locking section heretofore unobtainable in known packages.

Accordingly, it is an object and advantage of the invention to provide a new and improved beverage package which may be used on a wrap-around style package and on other type packages which combines primary male and female adjustable locking portions with secondary punch-style male and female locking portions in a manner more fully described hereinafter.

portion for a beverage package and production blank which utilizes a new combination of locking sections along with a tertiary locking section to provide a still further improved locking structure.

These and other objects and advantages of the invention will become apparent from a review of the drawings and from a study of the Description of the Preferred Embodiment which has been given by way of illustration only.

#### *Brief Description of the Drawings*

Figure 1 is a perspective view of a typical wrap-around style beverage package having bottom locking portions of the type herein covered by the Applicant's invention;

Figure 2 is a plan view of one style of production blank for utilizing the Applicant's novel combination of locking portions hereinbefore described;

Figure 3 is a bottom view of the package shown in Fig. 1, showing the oversize tab of the Applicant's primary male adjustable locking portion being locked whenever an oversize of bottles is sensed in the package when the package is being run through a packaging machine;

Figure 4 is a bottom view of the package shown in Fig. 1, showing the undersize tab of the primary male adjustable locking portion being locked whenever an undersize condition of the bottles is detected by the packaging machine through which the package would be run;

Figure 5 is a bottom view showing the positioning of the first or outer margin of the package and showing the secondary punch-style male locking portions about to be engaged with the female locking portions formed on the first margin;

Figure 6 is a bottom view of the package as seen in Fig. 5 showing the secondary punch-style locking portions formed on the first or outer margin of the package; and

Figure 7 is a partial plan view of the locking portions of a modification of the production blank shown in Fig. 2 showing a modification in the tertiary locking section of the locking portions.

#### *Description of the Preferred Embodiment*

Referring now to the drawings in general and in particular to Figs. 1 and 2 of the drawings, there is shown in Fig. 1, generally by the numeral 10, the Applicant's improved beverage package formed as a wrap-around style beverage carrier. The carrier has a centrally positioned top panel 12 having formed thereon handle means 14. The handle means 14 are formed as a pair of handle tabs hingedly attached by means of the score lines 16 and the die cuts 18. The top panel 12

score lines 22.

A pair of sloping side panels 24 and 26 are hingedly attached to opposite sides of the top panel 12 by means of the score lines 28 and 30. Each sloping side panel 24 and 26 has formed thereon a plurality of bottle neck receiving openings 32 for receiving the caps 34 of bottles 36 contained within the package.

A pair of vertical side panels 38 and 40 are hingedly attached to each side of the sloping side panels 24 and 26 by means of the score lines 42 and 44. The vertical side panels 38 and 40 have formed therein a plurality of bottle bottom receiving openings 46 for receiving the bottoms of the bottles 36 contained within the package.

A pair of bottom panels 48 and 50 are hingedly attached to each vertical side panel 38 and 40 by means of the score lines 52 and 54. A first outer margin 56 and 58 is hingedly attached to one of the bottom panels by means of the score line 60 as shown in Fig. 2 of the drawing. The first outer margin 56 and 58 is formed as a split margin by means of the die cut 62 as is known in the art. The first outer margin 56 and 58 has formed thereon primary male adjustable locking portions in the form of oversized tabs 64 and 66 as well as undersized tabs 68 and 70. The first outer margin 56 and 58 also has formed thereon secondary female punch-style locking portions in the form of a generally rectangular shaped secondary female opening 72 and 74.

In the preferred embodiment, the first outer margin 56 and 58 may also have formed thereon tertiary punch-style female locking portions 73 and 76 in the form of a generally rectangular shaped opening positioned as shown in Fig. 2 of the drawing.

On the opposite side of the production blank, there is formed a second or inner margin 78 hingedly attached to the bottom panel 48 by means of the score line 80. The second inner margin 78 has formed thereon primary female locking portions in the form of an irregular shaped slot 82 and 84. The irregular slots 82 and 84 have formed thereon an oversized position edge 86 and 88 and an undersized position edge 90 and 92. The oversized edge 86 and 88 and the undersized edge 90 and 92 are positioned to be engageable with the oversized tab 64 and 66 formed on the first margin 56 and 58 as well as the undersized tab 68 and 70 formed on the first margin.

A plurality of secondary punch style male locking tabs 146 and 148 are formed on the second inner margin 78 and are hinged thereto from the score line 80.

The second inner margin 78 may also have formed thereon a tertiary punch-style male locking portion in the form of a pair of punch-

primary female locking portions and secondary punch-style male locking portions. The production blank shown in Fig. 2 may also be formed with a pair of end panels 98 and 100 formed on the side of the package by means of the score line 102 and a plurality of end panels 104 and 106 formed on the other side of the package by means of the score line 108. Completing the ends of the package there may also be formed thereon a plurality of triangular panels 110, 112 and 114 formed on one side of the package by means of the score lines 116, 118, 120 and 122. On the other side of the package there may be formed thereon a plurality of triangular panels 124, 126 and 128 formed by means of the score lines 130, 132, 134 and 136.

Referring now to Fig. 7 of the drawing, there is shown a partial plan of a variation of the production blank locking portion shown in Fig. 2 showing a variation in the positioning of the tertiary locking portions of the invention should these portions be utilized in the preferred embodiment. It can be seen in Fig. 7 that the first outer margins 56 and 58 have formed thereon a pair of punch-style tertiary male locking tabs 138 and 140 formed on each side of the secondary opening 72 and 74. In a similar manner, the second inner margin 78 has formed thereon a pair of tertiary female locking portions in the form of a pair of rectangular shaped openings 142 and 144 positioned as shown in Fig. 7 between the primary female locking portions 82 and 84 and the secondary punch-style male locking portions 146 and 148. The remainder of the production blank configuration of the variation shown in Fig. 7 would be formed similar to that portion of the production blank shown in Fig. 2 of the drawing between the first and second margins.

Referring now to Figs. 3 to 6 of the drawing, there can be seen the locking sequence of the applicant's new and novel lock combination showing how the oversized tabs 64 and 66 would engage the oversized position edge 84 and 86 whenever an oversized group of bottles was sensed in the package by the packaging machine through which the package is run. This condition is shown in Fig. 3 of the drawings and the undersized condition is shown in Fig. 4 of the drawings where it can be seen that the undersized tabs 68 and 70 would then engage the undersize position edge 90 and 92 to lock the primary male adjustable locking portion of the Applicant's device.

Thereafter, the secondary punch-style male locking portion of the Applicant's combination would be engaged as shown in Fig. 5 whereupon the secondary punch-style male locking tabs 146 and 148 would be engaged in the secondary female punch-style locking open-

male punch-style locking tabs 146 and 148 is as shown in Fig. 6 of the drawing with the side edges 150 and 152 being positioned beneath the first margins 56 and 58 in the manner shown in Fig. 6.

Should it be desirable to use the tertiary locking feature of the Applicant's combination then the tertiary male locking tabs 94 and 96 would be engaged in the tertiary female openings 76 and 73 and would be engaged underneath the first margin 56 and 58 as seen also in Fig. 6.

From the foregoing, it can be seen that there has been provided by the subject invention a new and improved beverage package and production blank for a beverage package which may be used on a wrap-around style carrier and on other types of carriers with the novel feature comprising a combination of primary male adjustable locking portions and secondary female punch-style locking portions. This combination may also be utilized with a tertiary punch-style female locking portion formed on the margins of the package in order to obtain the desired degree of freedom from lock separation due to the various before-mentioned extraordinary conditions encountered in the package in the field. It should also become apparent from a review of the drawing that features of the combination may be varied and changes made in the various configuration of the locking structure and arrangement of the locking portions and the locking structure as well as other changes to the package without departing from the spirit and scope of the invention which shown in the preferred embodiment by way of illustration only.

Having described my invention, I claim:

#### CLAIMS

1. A beverage package for a plurality of cans or bottles of beverage, the package surrounding the cans or bottles and having locking portions positioned on overlapping first and second margins of the package, comprising:

(a) the first margin having formed thereon a primary male adjustable locking portion;

(1) the second margin having formed thereon primary female adjustable locking portions arranged for engagement with the primary male adjustable locking portions formed on the first margin;

(b) secondary punch-style male locking portions formed on the second margin; and

(1) secondary punch-style female locking portions formed on the first margin for engagement with the secondary punch-style male locking portions formed on the second margin.

2. The beverage package as defined in Claim 1 further comprising the primary male

prising at least one undersized position tab.

3. The beverage package as defined in Claim 2 further comprising the primary female adjustable locking portion comprising at least one oversized position slot positioned for engagement with the oversized position tab formed on the first margin and further comprises at least one undersized position slot positioned for engagement with the undersized position tab formed on the first margin.

4. The beverage package as defined in Claim 1 further comprising the secondary punch-style male locking portions comprising at least one arrow-shaped male locking tab.

5. The beverage package as defined in Claim 2 further comprising the secondary female punch-style locking portion comprising at least one rectangular-shaped female opening formed in the first margin.

6. The beverage package as defined in Claim 1 further comprising:

- (c) a tertiary punch-style male locking portion formed on the second margin and further comprises a tertiary punch-style female locking portion formed on the first margin positioned for engagement with the tertiary punch-style male locking portion formed on the second margin.

7. The beverage package as defined in Claim 6 further comprising the tertiary punch-style male locking portion comprising at least two arrowhead-shaped punched tabs formed one on each side of the primary female locking portion and the secondary punch-style male locking portion.

8. The beverage package as defined in Claim 1 further comprising the package being formed as a wrap-around style package and further comprising a plurality of end panels being hingedly attached to a portion of the package to enclose the ends of the package.

9. A beverage package for a plurality of cans or bottles and having locking portions positioned on overlapping first and second margins, comprising:

- (a) the first margin having formed thereon primary male adjustable locking portions; (1) the second margin having formed thereon primary female adjustable locking portions arranged for engagement with the primary male adjustable locking portions formed on the first margin;

- (b) secondary punch-style male locking portions formed on the second margin;

- (1) secondary punch-style female locking portions formed on the first margin for engagement with the secondary punch-style male locking portions formed on the second margin;

- (c) a tertiary punch-style male locking portion formed on the first margin; and

- (1) a tertiary punch-style female locking portion being formed on the second margin for engagement with the tertiary punch-style

gin.

10. A production blank for a wrap-around style beverage carrier, comprising:

- (1) a centrally positioned top panel having formed thereon handle means;

- (2) a pair of sloping side panels hingedly attached to opposite sides of the top panel, each side panel having formed therein a plurality of bottle neck receiving openings;

- (3) a pair of vertical side panels hingedly attached to each side of the sloping side panels, each vertical side panel having formed therein a plurality of bottle bottom receiving openings;

- (4) a pair of bottom panels hingedly attached to each vertical side panel;

- (5) a first outer margin hingedly attached to one of the bottom panels, the first outer margin having formed thereon primary male adjustable locking portions and secondary female punch-style locking portions; and

- (6) a second inner margin hingedly attached to the other bottom panel, the second inner margin having formed thereon primary female locking portions and further having formed thereon secondary punch-style male locking portions, the primary female adjustable locking portions being positioned for engagement with the primary male adjustable locking portions formed on the first margin and the secondary punch-style male locking portions being positioned for engagement with the secondary female punch-style locking portions formed on the first margin.

11. The production blank as defined in Claim 10 further comprising one of the margins having formed thereon tertiary punch-style male locking portions and the other of the margins having formed thereon tertiary punch-style female locking portions positioned for engagement with the tertiary punch-style male locking portions formed on one of the margins.

12. The production blank as defined in Claim 11 further comprising the tertiary punch-style male locking portion being formed on the second margin and further comprising the tertiary punch-style female locking portion being formed on the first margin.

13. The production blank as defined in Claim 11 further comprising the tertiary punch-style male locking portion being formed on the first margin and further comprising the tertiary punch-style female locking portion being formed on the second margin.

14. The production blank as defined in Claim 10 further comprising a pair of end panels being hingedly attached to opposite sides of the sloping side panels and the top panel for enclosing the ends of the package whenever the production blank is erected into a package.

15. The production blank as defined in claim 11 further comprising a pair of end



sloping side panels and the top panel for enclosing the ends of the package whenever the production blank is erected into a package.

---

Printed for Her Majesty's Stationery Office  
by Burgess & Son (Abingdon) Ltd.—1983.  
Published at The Patent Office, 25 Southampton Buildings,  
London, WC2A 1AY, from which copies may be obtained.